

**WHAT IS CLAIMED IS:**

1. A computer implemented method for queue order notification comprising:
  2. (a) determining a current position of a patron in a queue;
  3. (b) determining a current estimated time remaining for said patron using the current position of the patron and a selected set of historical data; and
  5. (c) transmitting queue order information to the patron using a preselected communication channel, and wherein, if the preselected communication channel is a duplex channel, the queue order information comprises a patron-selectable set of queue order information, the patron-selectable set including the estimated time remaining and the current position of the patron in the queue.
1. 2. The method of claim 1 wherein the set of historical data comprises a queue servicing rate for a preceding time interval, the estimated time remaining determined using a linear extrapolation with said queue servicing rate.
1. 3. The method of claim 2 wherein the queue servicing rate comprises a rate at which patrons have been served between a current time and a preceding notification time and wherein the set of historical data further comprises seasonal average patron service rates.
1. 4. The method of claim 1 wherein the steps (a), (b) and (c) are repeated at a preselected notification criterion, and wherein, if the communication channel is a duplex channel, the preselected notification interval comprises a patron-selected notification criterion.

1       5. The method of claim 4 wherein the patron-selected notification criterion  
2       comprises one of a set including a preselected notification time interval and a  
3       preselected queue position.

1       6. The method of claim 1 further comprising:

2             (d) notifying the patron upon reaching a head of the queue using the  
3       communication channel; and

4             (e) if the patron fails to respond after an expiry of a predetermined time  
5       interval after step (d), moving the patron to another position within the queue.

1       7. The method of claim 6, wherein the another position within the queue is an  
2       end of the queue.

1       8. The method of claim 1 further comprising:

2             (d) if the patron is at the head of the queue, determining if the patron can  
3       be accommodated; and

4             (e) if the patron cannot be accommodated, interchanging the current  
5       position of the patron and position of a next patron in the queue.

1        9. A computer program product embodied in a tangible storage medium, the  
2        program product for queue order notification comprising programming instructions  
3        for:

4              (a) determining a current position of a patron in a queue for receiving a  
5        service from a service provider;

6              (b) determining, a current estimated time remaining for said patron using  
7        the current position of the patron and a selected set of historical data; and

8              (c) transmitting queue order information to the patron using a preselected  
9        communication channel, and wherein, if the preselected communication channel is a  
10      duplex channel, the queue order information comprises a patron-selectable set of  
11      queue-order information, the patron-selectable set including the estimated time  
12      remaining and the current position of the patron in the queue.

1        10. The program product of claim 9 herein the set of historical data comprises a  
2        queue servicing rate for a preceding time interval, the estimated time remaining  
3        determined using a linear extrapolation with said queue servicing rate.

1        11. The program product of claim 10 wherein the queue servicing rate comprises  
2        a rate at which patrons have been served between a current time and a preceding  
3        notification time and wherein the set of historical data further comprises seasonal  
4        average patron service rates.

1        12. The program product of claim 9 further comprising programming instructions  
2        for repeating (a), (b) and (c) at a preselected notification criterion, and wherein, if the  
3        communication channel is a duplex channel, the preselected notification interval  
4        comprises a patron-selected notification criterion.

1       13. The program product of claim 12 wherein the patron-selected notification  
2       criterion comprises one of a set including a preselected notification time interval and  
3       a preselected queue position.

1       14. The program product of claim 9 further comprising programming instructions  
2       for:

3                 (d) notifying the patron upon reaching a head of the queue using the  
4       communication channel; and

5                 (e) if the patron fails to respond after an expiry of a predetermined time  
6       interval after step (d), moving the patron to an end of the queue.

1       15. The program product of claim 14 wherein the another position within the  
2       queue is an end of the queue.

1       16. The program product of claim 9 further comprising programming instructions  
2       for:

3                 (d) if the patron is at the head of the queue, determining if the patron can  
4       be accommodated; and

5                 (e) if the patron cannot be accommodated, interchanging the current  
6       position of the patron and position of a next patron in the queue.

1        17. A data processing system comprising:

2                (a) circuitry operable for determining a current position of a patron in a  
3 queue for receiving a service from a service provider;

4                (b) circuitry operable for determining, a current estimated time remaining  
5 for said patron using the current position of the patron and a selected set of historical  
6 data; and

7                (c) circuitry operable for transmitting queue order information to the  
8 patron using a preselected communication channel, and wherein, if the preselected  
9 communication channel is a duplex channel, the queue order information comprises a  
10 patron-selectable set of queue-order information, the patron-selectable set including  
11 the estimated time remaining and the current position of the patron in the queue.

1        18. The data processing system of claim 17 wherein the set of historical data  
2 comprises a queue servicing rate for a preceding time interval, the estimated time  
3 remaining determined using a linear extrapolation with said queue servicing rate.

1        19. The data processing system of claim 18 wherein the queue servicing rate  
2 comprises a rate at which patrons have been served between a current time and a  
3 preceding notification time and wherein the set of historical data further comprises  
4 seasonal average patron service rates.

1        20. The data processing system of claim 17 wherein (a), (b) and (c) further  
2        comprise circuitry operable for, patron at a preselected notification criterion,  
3        repeating the operations of:

- 4              (i) determining a current position of the patron;  
5              (ii) determining a current estimated time remaining; and  
6              (iii) transmitting queue order information to the patron.

1        21. The data processing system product of claim 20 wherein the patron-selected  
2        notification criterion comprises one of a set including a preselected notification time  
3        interval and a preselected queue position.

1        22. The data processing system of claim 17 further comprising:  
2              (d) circuitry operable for notifying the patron upon reaching a head of the  
3              queue using the communication channel; and  
4              (e) circuitry operable for, if the patron fails to respond after an expiry of a  
5              predetermined time interval the operation in (d), moving the patron to an end of the  
6              queue.

1        23. The data processing system of claim 22 wherein the another position within  
2        the queue is an end of the queue.

- 1        24. The data processing system of claim 17 further comprising:
- 2                (d) circuitry operable for, if the patron is at the head of the queue,  
3                    determining if the patron can be accommodated; and
- 4                (e) circuitry operable for, if the patron cannot be accommodated,  
5                    interchanging the current position of the patron and position of a next patron in the  
6                    queue.